

## NREL Staff Commuting / Transportation Survey Results

In June 2000, a survey was completed to determine the commuting habits of the NREL populous. Four hundred twenty three NREL employees responded to this survey. Currently NREL employees use the following means to get to and from work each day.

Transportation Type	Responses	% of NREL Responses
Personal Vehicle	339	80%
Bus	27	6%
Carpool	23	5%
Bike	17	4%
Metro	9	2%
Walk	5	1%
Other	3	1%

This table reflects the main type of transportation for each employee.

### VEHICLE STATISTICS

PERSONAL VEHICLE STATISTICS	
Data below represents all personal vehicle use reported during the survey (423 people total)	
Number of People	339 people
Number of People who drive Infrequently	13 people
Number of People who took the Bus Infrequently (of personal vehicle drivers)	9 people
Longest distance traveled to work (round trip)	175 miles
Shortest distance traveled to work (round trip)	1 mile
Average distance traveled to work (round trip)	29.2 miles
Total miles driven by NREL employees to work (per year)	2,761,123 miles/year
Average Miles per Gallon of NREL employees vehicles	25 miles per gallon
Average Emissions Produced per Vehicle per Year <sup>†</sup>	215 lbs. of CO 31 lbs. of NOx 27 lbs. of VHC 17 lbs. of Pm10 8,462 lbs. of CO2
Total Emissions Produced by NREL Personal Vehicles per Year <sup>†</sup>	75,726 lbs. of CO 11,018 lbs. of NOx 9,496 lbs. of VHC 6,148 lbs. of Pm10 2,978,485 lbs. of CO2
BUS STATISTICS	
Number of People	27 people
Number of People who used the bus Infrequently	15 people

Longest distance traveled to work (round trip)	100 miles
Shortest distance traveled to work (round trip)	3 miles
Average distance traveled to work (roundtrip)	45.7 miles
CARPOOL STATISTICS	
Number of People	23 people
Number of People who Carpool Infrequently	8 people
Longest distance traveled to work (round trip)	150 miles
Shortest distance traveled to work (round trip)	7 miles
Average distance traveled to work (roundtrip)	56.3 miles
BIKE TRAVEL STATISTICS	
Number of People	17 people
Number of People who Bike Infrequently	18 people
Longest distance traveled to work (round trip)	20 miles
Shortest distance traveled to work (round trip)	4 miles
Average distance traveled to work (roundtrip)	10.2 miles
METRO TRAVEL STATISTICS	
Number of People	9 people
Longest distance traveled to work (round trip)	40 miles
Shortest distance traveled to work (round trip)	2 miles
Average distance traveled to work (roundtrip)	17.1 miles
PEDESTRIAN TRAVEL STATISTICS	
Number of People	5 people
Longest distance traveled to work (round trip)	5 miles
Shortest distance traveled to work (round trip)	0.75 miles
Average distance traveled to work (roundtrip)	2.5 miles

+ AVERAGE AND TOTAL EMISSIONS NUMBERS BASED ON COLORADO DEPARTMENT OF HEALTH STATISTICS FOR 1999 VEHICLE AVERAGE EMISSIONS

++ NUMBER BASED ON THE ASSUMPTION THAT EMISSIONS PRODUCED FOR ONE BUS REPRESENT THE EMISSIONS FOR 10 NREL EMPLOYEES

The average emissions generated by each NREL employee traveling to and from work can be used to determine vehicle emissions avoided each year. The table below displays these average emissions avoided by NREL employees using alternative modes of transportation. Please note that bus and metro emissions were not considered in these numbers. Also, the average carpool consisted of two people so half of the 23 people who responded as using a carpool as their main source of transportation were used to determine vehicle emissions avoided.

ALTERNATIVE TRANSPORTATION TYPE	VEHICLE EMISSIONS AVOIDED
Bus (27 people)	5,805 lbs. of CO 837 lbs. of NOx 729 lbs. of VHC 459 lbs. of Pm10 228,474 lbs. of CO2
Metro (9 people)	1,935 lbs. of CO 279 lbs. of NOx 243 lbs. of VHC 153 lbs. of Pm10 76,158 lbs. of CO2
Carpool (half of 23 people)	2,473 lbs. of CO 357 lbs. of NOx 310 lbs. of VHC

	196 lbs. of Pm10 97,313 lbs. of CO2
Bike (17 people)	3,655 lbs. of CO 527 lbs. of NOx 459 lbs. of VHC 289 lbs. of Pm10 143,854 lbs. of CO2
Walk (5 people)	1,075 lbs. of CO 155 lbs. of NOx 135 lbs. of VHC 85 lbs. of Pm10 42,310 lbs. of CO2
TOTAL EMISSIONS AVOIDED	14,943 lbs. of CO 2,155 lbs. of NOx 1,877 lbs. of VHC 1,182 lbs. of Pm10 588,109 lbs. of CO2

No attempt to extrapolate this data for the entire NREL population was made based on the assumption that the people who do care about emissions and greenhouse effects would be more prone to respond to such a survey.

Of the personal vehicle drivers that responded to this survey the large majority had already looked into alternative forms of transportation and are not using it for one reason or another. The main reasons for not using alternative transportation methods included the following:

- RTD is very inconvenient
  - RTD needs longer hours of operation
  - RTD needs closer stops to home
  - RTD takes too much time
  - There is no RTD stop near the NWTC
- Live too far away to bike
- Live too far away to walk
- Kids, family, or other personal matters must be done before or following work

Also, a number of NREL employees who own personal vehicles chose their vehicles because of their low vehicle emissions. Nine NREL employees drive motorcycles to/from work. Four NREL employees mentioned that they purchased their car specifically because for its low emissions / high gas mileage. Four NREL employees own alternative fuel vehicles.

A great number of NREL employees had great praise to give the EcoPass program (bus riders and non-bus riders) and the majority of the NREL employees that responded said they would use RTD if it were more convenient.

If RTD/Metro were more accessible and more convenient would you use it on a regular basis for your daily commute to NREL?	
N/A	66 people
YES	231 people
NO	124 people

Do you use the RTD bus system for getting to and from meetings, conferences or seminars in downtown Denver?	
Did not Answer	75 people
NO	281 people
YES	66 people

Telecommunication was mentioned a number of times in the survey comments sections. Telecommuting is being considered by NREL currently and a Staff Council for Telework has been working to this end.

Many other statistics have also been found using the survey that are not included here. If you are interested in any of the data findings or have questions about the survey please contact:

***Charles Bersbach at x6183.***

Thanks again for helping NREL become a more sustainable entity through your participation.